

paid attention to M. King Hubbert and not relegated him to the lunatic fringe, and he was right as evidence indicates on his prediction from 1970, had we paid attention to him we would have had at least 20 years headstart, and then we could have done it alone in this country because we are so big and use so much of the world's energy.

Before we leave coal, we are going to come back to this and spend another hour with a lot of detail on this, but someone said there are 500 years of coal, that is not true there is maybe 250, at present use rates. But as oil becomes harder and harder to find, we are going to turn more and more to coal, and that 70 years with enormous environmental penalty will shortly become a relatively few years. That is not forever. But we will be leaning on coal more than in the past nuclear.

Three ways we can get nuclear energy. For one of them we are home free, and that is fusion. We send a little less than \$300 million a year on that. I would like to spend more if there was the infrastructure out there to support it, because if we get there, we are home free.

But I kind of think that hoping to solve our energy problems with fusion is a bit like you or me hoping to solve our personal financial problems by winning the lottery. That would be real nice. I think the odds are somewhere near the same. I am about as likely to win the lottery as we are to come to economically feasible fusion.

I hope I am wrong. Frequently my hopes and my anticipations are different. My anticipation is we are not going to get there because of the enormous engineering challenges. My hope is I am wrong and we are going to get there.

Two other ways to get energy from nuclear. One is the light water reactor, which is all we have in this country. By the way, tonight when you go home, every fifth home and every fifth business would be dark if we did not have nuclear. It produces 20 percent of all of our electricity. But there is not all that much fissionable uranium in the world, so we are not going to get there with light water reactors.

France produces about 80 percent of its electricity from nuclear. They have a lot of breeder reactors. They do what the name implies, they make more fuel than they use, with big problems, in enrichment, shipping it around, squirreling away the products for a quarter of a million years. That presents enormous challenges to us.

So there is the potential here in nuclear, but a lot of problems involved with it. It is not just that simple. By the way, it takes a lot of oil to build a nuclear power plant.

□ 2045

At some point, you pass the point of no return where there is not enough readily available high-quality fossil fuels to support our present economy while we make the investment we have

got to make to transition to these renewables. And then we come to true renewables: solar, wind, geothermal, ocean energy. All of these suffer.

By the way, I am a big supporter of these. I had the first hybrid electric car in Maryland. I had the first one in the Congress. I have a vacation home that is off the grid and totally powered by solar. And I am going to put in a wind machine. I am a big supporter of this.

But the energy density here is very low. And it is intermittent. It takes a lot of solar panels to produce the electricity that you use in your home. It takes 12 of them to power your ordinary refrigerator just as an example. So those are real potential, and they are growing. Wind machines now produce electricity at 3½ cents a kilowatt hour. That is getting competitive. A whole lot of them in California. They are in West Virginia. We are putting some up on Backbone Mountain in western Maryland.

Boy, if we could get down there to geothermal we would have it, would we not?

There is not a single chimney in Iceland because they do not need them. They have got geothermal. They have a little bit of it in the West. But for most of the world that molten core is far too deep for us to tap.

Mr. GILCHREST. If the gentleman would yield just for a second, I am sure he knows, but the general public, I do not think realizes it is not necessary to be sitting right on top of a volcanic area, an earthquake zone to get geothermal energy. We on the Eastern Shore of Maryland have a number of schools that are actually providing heat for those schools from geothermal energy. Some of these things are sort of a hidden secret. But it is the classical conventional wisdom that keeps us from exploring some of these things a little bit further. And I think the gentleman is bringing those out tonight.

Mr. BARTLETT of Maryland. Is this tying the school to the molten core, or is it simply using a heat pump and exchanging, not with the air? What you are trying to do in the winter-time is cool the air and what you are trying to do in the summer time is heat the air.

Mr. GILCHREST. It is actually bringing water up from the surface, from the subsurface. The water is much warmer further down.

Mr. BARTLETT of Maryland. It is indeed. But you still have to have energy to use that. You are much more efficient using a heat pump that is tied to the ground, to groundwater than it is to the cold air in the winter and the hot air in the summer. If you are thinking about what you are trying to do is to cool the cold air in the winter time and to heat the hot air in the summertime. And obviously ground water is very much better in both seasons than either the air in the winter or the cold, the hot air in the summer or the cold air in the winter.

Ocean energy. You know, it takes an enormous amount of energy to lift the

ocean 2 feet. That is roughly what the Moon does in the tides, is it not? But the problem with that is energy density.

There is an old adage that says what is everybody's business is nobody's business. And the corollary to that in energy is if it is too widely distributed, you probably cannot make much of it. And we have really tried to harness the tides. In some fjords in Norway where they have 60-foot tides you put a bar there, when it runs in you trap it and then you run it out through a turbine. When it is running out, you can get some energy from it. And there is potential there, a lot of potential energy. But you know it is very dispersed. We have a hard time capturing that energy.

I suspect that our hour is about up, and this is maybe a good place to end. We are going to come back and spend another hour looking at agriculture, enormous opportunities from agriculture. But let me remind the gentleman that we are just barely able to feed the world now. And if we start taking all of this biomass off the field, what is going to happen to the tilth of our soil, to the organic matter in our soil, which is essential to the availability of nutrients in the soil by the plant. So there are lots of challenges here. There are lots of opportunities here. And we will spend another hour talking about them. Thank you very much. And I yield back, Mr. Speaker.

FURTHER MESSAGE FROM THE SENATE

A further message from the Senate by Mr. Monahan, one of its clerks, announced that the Senate has passed a bill of the following title in which the concurrence of the House is requested.

S. 256. An act to amend title 11 of the United States Code, and for other purposes.

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF H.R. 1268, EMERGENCY SUPPLEMENTAL APPROPRIATIONS ACT FOR DEFENSE, THE GLOBAL WAR ON TERROR, AND TSUNAMI RELIEF, 2005

Mr. COLE of Oklahoma (during the Special Order of Mr. BARTLETT of Maryland), from the Committee on Rules, submitted a privileged report (Rept. No. 109-18) on the resolution (H. Res. 151) providing for consideration of the bill (H.R. 1268) making emergency supplemental appropriations for the fiscal year ending September 30, 2005, and for other purposes, which was referred to the House Calendar and ordered to be printed.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

Mr. BECERRA (at the request of Ms. PELOSI) for today.